North Plains Water News

A Publication of the NORTH PLAINS GROUNDWATER CONSERVATION DISTRICT

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Award-Winning Irrigation Efficiency Class Now Accepting Applications

North Plains Groundwater Conservation District in Dumas is now accepting applications for the 4th annual Master Irrigator class, beginning March 20, 2019. Through a partnership with the Natural Resources Conservation Service (USDA-NRCS), all graduates will be eligible to apply for funding to assist them in increasing their irrigation efficiency. Current funding is available through 2019. This cost-share program, combined with the intensive high-quality education offered, makes Master Irrigator a valuable opportunity for any producer within the North Plains Groundwater Conservation District's eight county service area.

Over 24 hours of instruction will provide farmers with tools and strategies that are commercially available for immediate implementation. Solutions presented in the course are practical, not theoretical, while still drawing from new studies and research. Efforts to get more crop per drop of irrigation are supported by presentations on the economics of certain strategies, offered by Steve Amosson, recently retired Texas A&M AgriLife Extension Economist and the Project Manager for Master Irrigator. Topics addressed include seeding rates, monitoring and telemetry, planting dates, system conversion, pivot control, irrigation scheduling, conservation tillage, nutrient application, and much more.

Master Irrigator instructors are among the top in their fields, from innovative farmers to cutting-edge researchers. The experts converge at the North Plains Water Conservation Center north of Dumas on four consecutive Wednesdays – March 20, March 27, April 3, and April 10. Each day begins at 8:30am and runs through the afternoon. Breakfast and lunch are provided at each session, thanks to the generous support of industry sponsors such as Reinke and Netafim. Attendance at all four sessions is required to graduate from the course and be eligible for funding.

Utilizing EQIP (Environmental Quality Incentive Program) funding from USDA-NRCS, graduates of the program have received over $1,000,000 towards efficiency upgrades such as pivot conversions, weather stations, soil moisture probes, subsurface drip irrigation, and more. 65 participants have graduated the class, with 100% of them stating that they will apply what they learned to their operations. These successes led to North Plains GCD being honored with a Texas Environmental Excellence Award, the top environmental award in the state, issued by the Texas Commission on Environmental Quality and Governor Greg Abbott.

In addition to the financial incentive, Master Irrigator participants find

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Producer panels held at the end of each session generate valuable interaction between participants. Stan Spain, Harold Grall, and Greg Howard presented on a Master Irrigator producer panel in April of 2018.

Time to Submit 2018 Production Reports

It's that time of year again – time for groundwater production reporting! It's important to report your groundwater use, not only to stay in compliance with district rules, but also to help build an accurate picture of what's going on underground in the aquifer. All 2018 production reports have been mailed out. The production reports must be properly filled out, signed, and sent with all required supporting documentation to North Plains Groundwater Conservation District no later than 5pm on March 1, 2019. Reports may be mailed, e-mailed, or submitted in person. Please notify the district office if you'd like to fax your reports.

A Conservation Reserve worksheet is included with most reports. The worksheet may be used to determine reserve after your production numbers are calculated. These are for the producer's use only and are not required to be turned back into the district.

Anyone who paid a late filing fee last year is eligible for a full refund if the report for 2018 is properly filed at the district office on or before January 15, 2019. All reports that are mailed back and are completed and postmarked on or before March 1, 2019 will be considered on time. Any report that is not on time, received or postmarked after March 1, 2019 will be subject to a late filing fee of $50 per day, per report until properly filed. Any report that is not complete will be considered not filed until corrected. If you are missing reports, haven't received reports, or have received reports that you are no longer responsible for, please notify North Plains GCD immediately.

If you have any questions about your production reports, please contact us at 806-935-6401.

Corn Population Demonstrations at WCC

By Nicholas Kenny, P.E.
North Plains GCD contract irrigation engineer

There are probably 30,000 opinions on the topic of corn plant population; one for each seed dropped between 15K and 45K seeds per acre. All exaggeration aside, corn population debates are worth the effort within the Texas North Plains since the proper strategy for plant population can be the best hedge on limited water for profitable returns.

This past year, two 9.25-acre blocks of subsurface drip irrigation (SDI) at the

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Corn was harvested from the West pivot demonstration field at the North Plains Water Conservation Center on November 5, 2019.

Importance of Playa Lakes

In the first installment of this two-part series on playa lakes, North Plains GCD Program Coordinator, Odell Ward, introduced the idea of playas as ephemeral water bodies, meaning they are not lways full of water. Ward explained many of the characteristics of these often-misunderstood low places in the topography. In the final part of the series Ward writes about the role playas play in the ecosystem.

These temporary wetlands are located almost entirely on privately owned lands, resulting in inconsistent management strategies from one playa to another. Playas form at the lowest point in an enclosed watershed, meaning there is no outlet like a stream or creek to allow the water to drain off. The landcover surrounding a playa dramatically influences the health of a playa. Grasses around the playas work to filter sediments and slow runoff that prevents otherwise suspended sediments from clogging playa bottoms. Slowing flow into the playa from surrounding areas prevents channeling in the playa perimeter reducing or preventing erosion.

Playa lakes are essential to the region in several ways including an aesthetic value. Fall ponding in playas is important to migratory waterfowl and other water birds as they provide resources and rest stops for the migrating birds. During dry cycles, playas provide cover and habitat for native non-migrating animal species as well.

Don Kahl is a Migratory Game Bird Specialist for Texas Parks & Wildlife Department and the coordinator of the Texas Playa Conservation Initiative. Don takes interested groups on walking tours of a playa at the Ogallala Commons Playa Classroom in Nazareth.

The greatest threat to playa lakes is the constant encroachment of urban development and mechanized agriculture. As cities expand and incorporate more lands into their boundaries, playas are filled, cross cut with roads and highways, and otherwise destroyed. In many urban areas where houses and shopping centers are constructed, playas are filled in and leveled to reduce flooding.

In many areas, farmers plow and plant playas during the dry cycles to increase acreage. Farming playas breaks up the clay-rich soils that accumulate in the bottom of the playa over thousands of years. Farming removes the grassy areas around the perimeter of the playa resulting in increased soil erosion. The combination of the increased sedimentation from erosion and the breaking up of the clay layer prevents cracks from forming in the bottom of the playas that ultimately reduce or restrict water infiltration altogether.

Playa lakes in their natural states can benefit urban centers in many ways if left intact. Proper buffers of native vegetation surrounding the playas can catch sediments and slow runoff, allowing salts and some chemical pollutants to precipitate out before entering playas. Playas near urban settings can add an aesthetic value to the landscape by attracting multiple species of mammals and birds to the water, food and cover they provide. The plants and animals in turn attract people. In addition, playas in urban settings can increase property values by reducing flooding potential, reduce the need for wastewater treatment and holding ponds, and filter out contaminants.

Save Paper and Water by Choosing our E-Newsletter

North Plains GCD now offers our district newsletters by email. If you would like us to send you a digital copy of the newsletter, you can go online at www.northplainsgcd.org/sign-e-news/ and fill out the form, or just email info@northplainsgcd.org. You can also go online to download previous newsletters, and find us on Facebook, Twitter and Instagram.

Corn Population Demonstrations at WCC

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North Plains Water Conservation Center (WCC) were devoted to a side-by-side evaluation of 32K and 40K planting populations. Both plots were planted on May 22nd with Dyna-Gro 58VC37 following cotton and a very short oat cover crop that was shallow tilled.

The irrigation system capacity on the plots was 5.5 GPM / acre and the soil profile was full to a 4' depth shortly after planting. The plots received 25-inches of irrigation water and 8-inches of in-season rainfall. This approach demonstrates traditional, full irrigation.

As anticipated under full irrigation, the 40K plot out-yielded the 32K plot; 260 bushels/acre to 243 bushels/acre. The interesting observation, however, is how the two treatments self-regulated soil water extraction. The 40K plot extracted approximately 4.25-inches of water from the soil and the 32K plot finished the season with net zero inches of soil water extraction. The 32K plot ran out of flex potential and was not able to capitalize on the available water to match the higher yield of the 40K plot.

But, the 32K plot demonstrated a 5.2% advantage in water use efficiency (7.35 bushels/inch vs. 7.0 bushels/inch) since it maxed its flex potential and rationed its water. Note that anything over 7 bushels / inch is excellent.

The more telling story lies in the economics, where incremental efficiencies are translated into real dollars. In addition to the improved marginal return on water, the three main variable costs (water, seed, and fertilizer) offer tangible reductions in input costs at the lower planting population. Thus, despite an improved revenue stream from the 17-bushel per acre yield advantage, the 40k plot cannot beat the net return of the 32K plot until corn price exceeds $3.95 / bushel. The October 2018 average corn price was in the $3.80 / bushel range with a late spike at $3.91.

Chasing additional yield with additional inputs is not usually the best financial strategy. Ringing the bell doesn't keep you in business. Poor yields don't keep you in business, either. Marginal efficiencies must be specifically leveraged to make the best return on investments and it is wise to judge operational success by profit rather than yield.

An unexpected observation from this trial at the WCC is that the economic findings occurred under full-irrigation. Although not yet conclusive, the economics lean even more favorably toward lower populations as irrigation capacity is reduced. Since there are very few operations in the North Plains that can consistently commit 25" of irrigation water to a corn crop, the reaching implication of this project is that there is an opportunity to manage water risk and maximize profits across nearly every acre within the district by reducing planting populations.

It also bears stating that active fertilizer management is vital for matching planting populations with maximum returns. Too much fertilizer and the budget is broken. Too little fertilizer and you can't push grain production into a profitable yield range. Rather than blind anhydrous injections, pre-season soil sampling is highly recommended to credit the budget with residual nitrogen. Split, in-season applications of nitrogen help pace the crop with seasonal variations and allow for timely fertility boosts as beneficial rainfalls occur. Without adequate water, additional nitrogen and seed is wasted money.

A good starting point for determining populations is 6,000 seeds for every GPM / acre. It is important to consider that every corn hybrid will flex down as resources become limiting and nothing wastes more water than a crop that loses money. An effective strategy on plant population will lead to a more profitable bottom line. That's an ambition that everyone can reach consensus on.

Irrigation Efficiency Class

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substantial value in the producer panels at the end of each session. North Plains GCD recruits local farmers to participate in a collaborative discussion to share their successes and lessons learned regarding the day's topics. A graduate of the 2017 Master Irrigator class said "Producer panels were outstanding. It was beneficial just to listen to producers in the audience discuss the things they were doing on their individual operations."

Farmers in the North Plains Groundwater Conservation District are invited to join the 2019 Master Irrigator class by applying at the district office or online at www.northplainsgcd.org/masterirrigator. Applications will be accepted on a first-come, first-served basis until the class reaches capacity or until March 8th, 2019. Class size is kept at 25 participants to ensure a collaborative environment and fund availability, and priority is given to producers within the district. Places in the class are given to non-producers and applicants out-of-district as space allows. For more information about Master Irrigator, please call 806-935-6401 or visit www.northplainsgcd.org/masterirrigator For additional information about the EQIP program, contact your local NRCS office or visit www.tx.nrcs.usda.gov. USDA is an equal opportunity provider, employer and lender.

District Recognizes First Xeric Zone

In August North Plains GCD launched a recognition program for local gardeners and homeowners that work to save water while maintaining a beautiful landscape. We are proud to feature our first Xeric Zone recipient, Annette and Allyn Melius of Dalhart. Their home in Dalhart exemplifies all that we look for in a Xeric Zone, from the use of native, drought-tolerant plants, to rainwater harvesting and creative watering practices, to the exceptional display of beautiful colors.

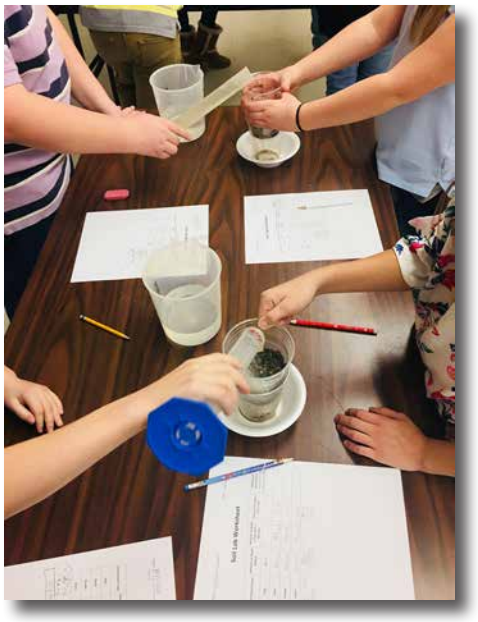
Any person or business within North Plains GCD is welcome to seek Xeric Zone recognition or nominate someone else. A Xeric Zone is a landscape that uses water saving elements including but not limited to: pavers or flagstones instead of grass, native and drought-tolerant plants, turf alternatives, mulching, and responsible irrigation.

Most plants aren't looking too great these days, but the spring growing season is just around the corner! Get a head start on a beautiful water-wise yard (and Xeric Zone status) by visiting www.northplainsgcd.org/xericzone for gardening tips, and save the date for a xeriscaping class hosted by North Plains GCD on March 2, 2019. Neal Hinders, owner of Canyon's Edge Plants, is returning to teach the class. He brings a wealth of plant knowledge and landscaping experience in a dynamic presentation. More details about the class will be available as the date gets closer – please call 806-935-6401 to be added to the interest list and receive a reminder once the time and location are set!

Education Program Offerings

The district is happy to offer 3 types of educational presentations this year to students within North Plains GCD boundaries:

- Soil Sleuth Lab (Grades 3-8) Learn about the properties of soils and how they are formed. Students will participate in a hands-on investigation to observe how water moves through different soils, and then discuss the real-world implications of a soil's water retention or drainage. 45-75 minutes, <30 students at a time, must have tables and chairs for all students.
- EnviroScape Adventure (Grades K-8) Explore the water resources of a realistic model town and learn how the water cycle and watersheds can be impacted by human activities. Please keep in mind that a short version of this activity is presented at the 4th grade water festivals each year. 30-45 minutes, <30 students at a time, must have large table for presentation setup and space for students to gather around.
- Friends of the Farm (Grades K-8) What did you wear, eat, and do today? Discover all the ways that local agriculture impacts your life, and see how farmers use and save water. 30-60 minutes, <30 students at a time.



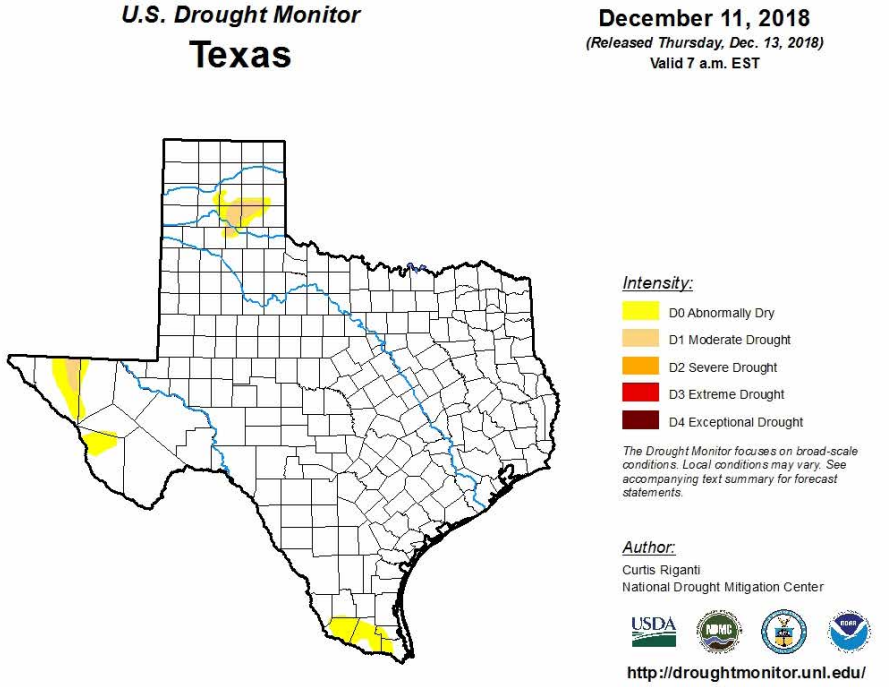
To book an in-class presentation, please call Julia Stanford at 806-930-6934 or e-mail jstanford@northplainsgcd.org with your proposed date (we prefer 2-3 weeks notice), number of classes, grade level, and the presentation requested. Presentation dates are limited and available on a first-come, first-served basis.

Save the dates for the 2019 Save the Planet's Water Festivals for fourth grade students! We'll be in Dumas on April 24, Dalhart on April 25, and Perryton on April 26.

Save Time & Stay in Compliance with Cutoff Valves

Farmers everywhere use low pressure drains (LPDs) as an important part of their irrigation wells. As widespread as LPDs are, however, they have one major flaw- they leak. Leaking mostly occurs when debris gets stuck in the device and holds the mechanism open, allowing water to leak out. The way they are usually attached makes this an even larger problem because, to clean the LPD, the farmer has to shut down their entire system. Some have developed "fixes" for this, such as putting caps on the low pressure drain. Unfortunately, such solutions are out of compliance. See rule 4.5 at www.northplainsgcd.org/rules.

An alternate option for making LPDs more functional for the farmer is adding a cutoff valve and an oversized coupler to the well before the drain. North Plains GCD Natural Resource Specialist Chris Hanes recommends a poppet drain because it is easier to depress and clean out. While this doesn't necessarily prevent the low pressure drain from becoming clogged or stuck open, the cutoff valve gives the farmer the ability to take the water pressure off the LPD temporarily so it can be cleaned without shutting down the well. To be in compliance, the valve must still be left open at all times except when the LPD needs to be cleaned or repaired.



Upcoming Events

- January 14 Pioneer Crop Production Clinic, Dalhart
- January 15 Pioneer Crop Production Clinic, Dumas
- January 16 Pioneer Crop Production Clinic, Stratford
- January 17 Pioneer Crop Production Clinic, Spearman
- January 17 TAWC Water College, Lubbock
- January 23 AgriLife Cotton Conference, Dalhart
- January 31 Moore County Crops Conference, Dumas
- February 1 AgriLife Cotton Conference, Spearman
- March 2 Xeriscape Gardening Class, Location TBD

www.northplainsgcd.org/events

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Educators Learn New Ways to Teach Conservation

North Plains Groundwater Conservation District's new Tips & Sips education series has some area teachers taking on the role of student to learn water conservation activities for their classrooms. Tips & Sips is a series of learning experiences designed to equip educators with new ways to engage their students around the concepts of water conservation and stewardship. The program is presented in cooperation with Project WET, a nationwide water conservation education organization. The four evening workshops take place at The Plaza Restaurant in Dumas with the district providing appetizers and The Plaza pitching in a beverage for each of the participants. Each workshop is approved for continuing education credit and any participant who completes all four workshops will be certified as a Project WET Educator. Those completing certification will receive a Project WET Curriculum and Activity Guide, complete with 64 activities spanning grade levels K-12.

The first two sessions took place on November 6th and December 4th. Educators participated in hands-on activities including "Nature Rules," incorporating water-related news articles into class discussion and writing exercises. Another activity known as "We All Live Downstream" involved the teachers spreading contaminants over a watershed model and then using spray bottles to rain on the watershed and see where all the pollution goes. Finally,

participants solved the mystery of unexplained illnesses caused by contamination of groundwater.

The final two sessions are scheduled for January 15th and February 12th and spaces are still available. For more information about Tips & Sips contact Julia Stanford at jstanford@northplainsgcd.org.